

Claims

1. A stain blocking water borne coating composition comprising an organic
5 binder and as stain blocking agent at least one type of inorganic nano-
particles having a layered structure and a crystal structure with positively
charged layers.
2. The stain blocking water borne coating composition according to claim 1,
10 wherein the nano-particles are anionic clays or layered double hydroxide
(LDH) salts.
3. The stain blocking water borne coating composition according to claim 2,
15 wherein the layered double hydroxide (LDH) is selected from the group
consisting of hydrotalcite, stichtite, pyroaurite, desautelsite, and sergeevite,
optionally modified with one or more dispersing agents.
4. The stain blocking water borne coating composition according to any one of
20 the preceding claims comprising one or more water borne organic polymeric
binders selected from the group consisting of acrylic and styrene-acrylic
dispersions, vinyl acetate copolymer dispersions, alkyd emulsions,
polyurethane dispersions, water borne hybrids between urethane and acrylic
polymeric dispersions, and UV-curable water borne polymer dispersions.
- 25 5. The stain blocking water borne coating composition according to claim 1 to
4, further comprising one or more components selected from the group
consisting of emulsifiers, pigments, fillers, dispersants, coalescing agents,
curing agents, thickeners, humectants, wetting agents, biocides, plasticisers,
antifoaming agents, colourants, waxes, and antioxidants.
- 30 6. The stain blocking water borne coating composition according to claim 1 to
5, which composition is a clear coat composition.

7. The stain blocking water borne coating composition according to claim 1 to 6, further comprising at least 0.3 wt percent of a dispersing agent.
8. The stain blocking water borne coating composition according to any one of
5 claims 1-7, wherein the total amount of inorganic nano-particles is 0.1-40% by weight, based on the total weight of the water borne coating composition, and wherein the total amount of water borne organic polymeric binders is 20-100% by weight, based on the total weight of the water borne coating composition.
- 10 9. The stain blocking water borne coating composition according to any one of claims 1 - 7, wherein the staining agent-containing substrate is a tannin-containing wooden substrate.
- 15 10. A method for coating a substrate comprising water extractable staining agents wherein the substrate is coated with an organic water borne coating composition comprising at least one type of inorganic nano-particles as stain blocking agent.
- 20 11. The method according to claim 10, wherein the inorganic nano-particles comprise anionic clays, cationic clays and/or layered hydroxy salts (LHS).
12. The method according to claim 10, wherein substrate is coated with the stain blocking water borne coating composition according to claim 1 to 8.
- 25 13. A coated substrate comprising water extractable staining agents obtainable by the method according to claims 10 to 12.
14. The coated substrate according to claim 13, wherein the substrate is
30 selected from the group consisting of a wooden, cementitious, metal, mineral

and synthetic substrate, substrate made from processed wood, painted wood or primed wood.

15. Use of one or more types of inorganic nano-particles as stain blocking agent
5 in an organic water borne coating composition.

16. Use according to claim 15, wherein the inorganic nano-particles comprise anionic clays, cationic clays and/or layered hydroxy salts (LHS).

10 17. Use according to claim 16, wherein the inorganic nano-particles comprise a layered double hydroxide (LDH).

18. Use according to claim 17, wherein the layered double hydroxide (LDH) is selected from the group consisting of hydrotalcite, stichtite, pyroaurite, desautelsite, and sergeevite, optionally modified with one or more dispersing
15 agents.